

REMARKS

The Examiner's Action mailed on June 22, 2006 has been received and its contents carefully considered. In this Amendment, Applicants have amended claims 1, 8-10, and specification for improved clarity. Claims 1 and 8 are independent claims. After entry of the above-amendments, claims 1-10 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The undersigned wishes to thank Examiner Dudek for conducting telephone interviews on August 24 and October 10, 2006, with Applicants' representative, David Rodack (Registration number 47,034). Applicants' representative requested the interviews to clarify points of distinction between the art cited in the last Office Action and claims 1-10. There was no agreement reached with regard to the patentability of the claims. In the August interview, Applicants' representative re-emphasized that an ohmic contact layer is not a photo-resist block and that the photo-resist block was not being used to pattern the conductive layer. Examiner Dudek acknowledged that the photo-resist block was not being used to pattern the conductive layer, and further observed that the import of the photo-resist block is unclear. In the October interview, Applicants' representative pointed out that the formation of the drain, source, and photo-reflective layer was simultaneous. Examiner Dudek pointed out that, as applied to claim 1, simultaneous was not recited, and further that such a feature was previously rejected in the March 1, 2006 Office Action. Applicants' representative indicated that further discussion with the client was warranted to determine the next course of action.

Claims 1, 3 and 6-9 are rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Ha et al. (U.S. Patent No. 6,937,304). It is submitted that these claims are patentably distinguishable over the cited reference for at least the following reasons.

It is well settled that a reference may anticipate a claim within the purview of 35 USC §102 only if all the features and all the relationships recited in the claim are taught by the reference either by clear disclosure or under the principle of inherency.

However, the cited reference *Ha* (U.S. Patent No. 6,937,304) does not disclose various features recited in independent claims 1 and 8.

First, in this amendment, the original term of “photo-reflective layer” in the claims has been amended to “**reflective pixel electrode**” for improved clarity. However, it is known by people the photo-reflective layers according to the present invention, including the photo-reflective layers 150 and 225, function as the **reflective pixel electrodes** within the reflective areas of applied transflective TFT-LCD panels. Also, this amendment is well supported by the original specification and drawings of the present invention, especially by para. [0008], para. [0025], para. [0026], FIG. 1F and FIG. 2F. Since the photo-reflective layer 225 is electrically connected to the drain 220 (para. [0025]), it is known by people skilled in the art that the photo-reflective layer 225 functions as a **reflective pixel electrode** in the applied transflective TFT-LCD panel. Accordingly, this amendment contains no new matter.

Applicant's amended independent claim 1 is directed to a manufacturing method of a transflective TFT-LCD panel. The method comprises the steps as follows. First, a first conductive layer is formed on a substrate, and the first conductive layer is patterned to form a gate. Next, a dielectric layer is formed on the substrate to cover the gate, and a channel is formed on the dielectric layer, wherein the channel is disposed over the

gate. Then, a photo-resist block is formed, and a second conductive layer is formed to cover the channel and the photo-resist block. The second conductive layer is patterned to form a source, a drain and a reflective pixel electrode **simultaneously**, wherein the source and the drain are disposed above the gate, and the reflective pixel electrode is formed on the photo-resist block, and the reflective pixel electrode and the drain are ***discrete***. Next, a protection layer is formed to cover the source, the drain and the reflective pixel electrode. The protection layer is patterned to form a first opening on the drain allowing part of the drain to be exposed, and to formed a second opening on the reflective pixel electrode allowing part of the reflective pixel electrode to be exposed. Afterward, a transparent electrode is formed and electrically connected to the drain and the reflective pixel electrode via the first opening and the second opening.

Applicant's independent claim 8 recites a manufacturing method of a transflective TFT-LCD panel equipped with a transmissive area and a reflective area. The method comprises the steps as follows. First, a thin film transistor and a capacitor electrode are formed on the substrate, and a reflective pixel electrode within the reflective area and a source and a drain of the thin film transistor are formed simultaneously, wherein the reflective pixel electrode and the drain are ***discrete***. Next, a *transparent electrode* is formed within the transmissive area to electrically connect the reflective pixel electrode and the drain.

In contrast, Ha et al. (ref. 304), disclosing a method for manufacturing a transflective LCD, fails to disclose the features of the present invention, particularly the step of forming the source, the drain and the reflective pixel electrode simultaneously. What the Examiner called the third metal layer (formed from chrome (Cr)) of Ha (304)

would not and could not be functioned as the second conductive layer in the sense of claimed invention.

The second conductive layer of the claimed invention is used for forming the source, drain and reflective pixel electrode. The the photo-reflective layer 225 in the drawings and embodiment of the invention, which is electrically connected to source and drain, functions as the reflective pixel electrode within the reflective area of a transflective LCD. In Ha's disclosure, after a third metal (chrome) is formed on the gate insulating layer 143, a patterning step is performed to form a source 133, a drain electrode 135 and a capacitor electrode 149 (please see col. 10, lines 10-30 & FIG. 7B). However, in Ha (304)'s disclosure, the third metal layer made of chrome (Cr) is only used for forming the source, drain and capacitor electrode, **a reflective electrode multilayer (166a+168a) is still needed**. In other words, the third metal layer of Ha could not and would not function as the reflective pixel electrode. Instead of forming a reflective pixel electrode together with the formation of source and drain, a reflective electrode of Ha (i.e. the reflective electrodes 166a and 168a, electrically connected to source/drain through transparent electrode 119a, see FIG. 7E) has been constructed above the source, drain and capacitor electrode. Thus, Ha clearly teaches that a first reflective electrode 166a and a second reflective electrode 168a (act together as the reflective pixel electrode in the sense of the claimed invention) are formed **after** forming the passivation layer 169 (please see col. 11, lines 35-40 & FIG. 7F). Therefore, the photo-reflective layer 166a and 168a of Ha's disclosure (i.e. on the top of the passivation layer 169) is formed in the later manufacturing step (**after** the formation of source and drain), which is a technique already mentioned by the Applicants as conventional art (FIG. 1A~FIG. 1F). Accordingly, it is clearly indicated that Ha (304)

doesn't teach the feature of "forming S/D and reflective pixel electrode simultaneously" as the claimed invention does. Also, if using Ha's method, a third metal layer is still needed, and manufacturing cost can not be reduced. Thus, the advantage of cutting manufacturing cost down (please see para. [0017]) of the claimed invention can not be achieved using Ha's method.

Besides, what the Examiner calls a photo-resist block (ohmic contact layer 147) is not a photo-resist block in the sense of the claimed invention. The photo-resist block 210 of the claimed invention and the ohmic contact layer 147 of Ha are used to serve entirely different purposes. Examiner acknowledges that the photo-resist block 210 used to pattern a conductive layer is well known. However, the photo-resist block 210 is **not** used to pattern a conductive layer in the claimed invention, and also is not identical to the ohmic contact layer 147. With the photo-resist block 210 of the claimed invention, the source, the drain and the reflective pixel electrode can be formed simultaneously, and this key feature of the claimed invention cannot be achieved according to Ha's disclosure, with or without the ohmic contact layer 147.

Accordingly, Ha (304) neither disclose nor suggest that source, drain and reflective pixel electrode are formed simultaneously. As such, it is submitted that claims 1, 3 and 6-9 are patentably distinguishable over the cited reference. It therefore is requested that this rejection be withdrawn.

Claims 2, 4, 5 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dohjo (U.S. Patent No. 6,078,366) in view of Ha et al. (U.S. Patent No. 6,937,304). For at least the following reasons, Applicants respectfully disagree and request reconsideration and withdrawal of the rejections.

However, Ha (304) and Dohjo (366) neither teach nor suggest the claimed invention, particularly the step of forming source, drain and reflective pixel electrode simultaneously. Actually, the Examiner acknowledged that Dohjo (366) **doesn't teach** the feature of the simultaneous formation of the source, the drain and the reflecting electrode in the Office Action mailed on Mar 01, 2006. Therefore, it clearly would not be possible and obvious to a person skilled in the art to achieve the claimed invention by making a combination from Ha (304) and Dohjo (366), both having no teaching and suggestion of the features in the claimed inventions. Thus, Applicants respectfully disagree and request reconsideration and withdrawal of the rejections.

The Examiner further rejected claims as being unpatentable over *Dohjo* (6,078,366) in view of *Fujino* (6,809,785), and stated that "it would have been obvious to combine the references because *Fujino* teaches forming the source, drain and reflecting electrode simultaneously" in the Office Action mailed on Mar 01, 2006. However, Applicants respectfully disagree and request reconsideration.

Dohjo (6,078,366) discloses a method of manufacturing an optical **transmissive** LCD. *Ha* (6,937,304) discloses a technique already mentioned by the Applicants as conventional art. Both of *Dohjo* and *Ha* neither suggests nor discloses the features of the claimed invention. Although *Fujino* (6,809,785) disclose step of forming source, drain and reflecting electrode simultaneously, the other features are different from the claim invention. For example, in the *Fujino*'s disclosed structure, the drain directly connects the reflecting electrode 10 through the hole H1, and the drain is electrically connected to the transparent electrode 9 through the reflecting electrode 10. *Fujino* fails to disclose or suggest, even teach away, that **the reflective pixel electrode and the drain are discrete**, and the reflective pixel electrode is electrically connected to the

drain by the transparent electrode, as recited in the claimed invention. In other words, the structure and method as a whole of *Fujino* are totally different from the claimed invention. Thus, the combination of references *Dohjo* (6,078,366), *Fujino* (6,809,785) and *Ha* (6,937,304) would require a substantial reconstruction or redesign of the elements shown in those references. Accordingly, the suggested combination of references would be too substantial to have been obvious. Besides, it is impermissible to use hindsight reconstruction to pick and choose among isolated disclosures in the prior art or piece together the teachings of the prior art to deprecate the claimed invention (*In re Fritch*, 972 F. 2d 1260, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992)). The method in the claimed invention must be considered as a whole. Thus, the motivation would be too general for a person of ordinary skill to combine those references, and the claimed invention should not be rendered obvious.

CONCLUSION

For at least the foregoing reasons, it is submitted that the independent claims 1 and 8 patentably distinguish over the prior art, and claims 2-7, and 9-10 are allowable for at least the reason that they depend from claims 1 and 8, so that this application is in condition for allowance. Allowance of the application and the passing of this case to issue are therefore respectfully requested.

If the Examiner believes that a conference would be of value in expediting the prosecution of this application, the Examiner is hereby invited to telephone the undersigned counsel to arrange for such a conference.

A credit card authorization is provided herewith to cover the fee for the accompanying RCE. No additional fee is believed to be due in connection with this

submission. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

By:


Daniel R. McClure
Registration No. 38,962

Thomas, Kayden, Horstemeyer & Risley, LLP
100 Galleria Pkwy, NW
Suite 1750
Atlanta, GA 30339
770-933-9500